

COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD
REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION

9 VAC 5 CHAPTER 40.
EXISTING STATIONARY SOURCES.

PART II.
Emission Standards.

ARTICLE 37.
Emission Standards For Petroleum Liquid
Storage and Transfer Operations (Rule 4-37).

- 9 VAC 5-40-5200. Applicability and designation of affected facility.
- 9 VAC 5-40-5210. Definitions.
- 9 VAC 5-40-5220. Standard for volatile organic compounds.
- 9 VAC 5-40-5230. Control technology guidelines.
- 9 VAC 5-40-5240. Standard for visible emissions.
- 9 VAC 5-40-5250. Standard for fugitive dust/emissions.
- 9 VAC 5-40-5260. Standard for odor.
- 9 VAC 5-40-5270. Standard for toxic pollutants.
- 9 VAC 5-40-5280. Compliance.
- 9 VAC 5-40-5290. Test methods and procedures.
- 9 VAC 5-40-5300. Monitoring.
- 9 VAC 5-40-5310. Notification, records and reporting.
- 9 VAC 5-40-5320. Registration.
- 9 VAC 5-40-5330. Facility and control equipment maintenance or malfunction.
- 9 VAC 5-40-5340. Permits.

9 VAC 5-40-5200. Applicability and designation of affected facility.

A. Except as provided in subsection C of this section, the affected facility to which the provisions of this article apply is each operation involving the storage or transfer of petroleum liquids or both.

B. Except as provided in subdivisions 1, 2, and 3 of this subsection, the provisions of this article apply to sources of volatile organic compounds in volatile organic compound emissions control areas designated in 9 VAC 5-20-206.

1. The emission standards in 9 VAC 5-40-5220 C, D, E, and G shall not apply to affected facilities in the following localities: Botetourt County, Frederick County, and Winchester City.

2. The emission standard in 9 VAC 5-40-5220 F shall apply only to affected facilities in the Northern Virginia and Richmond Volatile Organic Compound

Emissions Control Areas. For the purposes of applicability of 9 VAC 5-40-5220 F only, the Richmond Emissions Control Area does not include Prince George County and Petersburg City.

3. The emission standard in 9 VAC 5-40-5220 C shall apply to affected facilities in Bedford County.

C. The provisions of this article do not apply to affected facilities using petroleum liquids with a vapor pressure less than 1.5 pounds per square inch absolute under actual storage conditions or, in the case of loading or processing, under actual loading or processing conditions. (Kerosene and fuel oil have vapor pressures of less than 1.5 pounds per square inch absolute under actual storage conditions; therefore, kerosene and fuel oil are not subject to the provisions of this article when used or stored at ambient temperatures).

D. The burden of proof of eligibility for exemption from this article is on the owner. Owners seeking such an exemption shall maintain adequate records of average monthly throughput and furnish these records to the board upon request.

9 VAC 5-40-5210. Definitions.

A. For the purpose of these regulations and subsequent amendments or any orders issued by the board, the words or terms shall have the meaning given them in subsection C of this section.

B. As used in this article, all terms not defined here shall have the meaning given them in 9 VAC 5 Chapter 10 (9 VAC 5-10-10 et seq.), unless otherwise required by context.

C. Terms defined.

"Average monthly throughput" means the average monthly amount of gasoline pumped at a gasoline dispensing facility during the two most recent consecutive calendar years or some other two-year period which is representative of normal source operation. If the board determines that no two-year period is representative of normal source operation, the board shall allow the use of an alternative period of time upon a determination by the board that it is more representative of normal source operation. Downtime, such as a full or significant shutdown of a facility's operation due to construction, shall not be included when calculating average monthly throughput.

"Begin actual construction" means initiation of permanent physical on-site construction of a new gasoline dispensing facility. This includes, but is not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures.

"Bulk gasoline plant" means a secondary distribution point for delivering

gasoline to local farms, businesses, service stations and other distribution points, where the total gasoline throughput is 20,000 gallons or less per working day, based on the daily average for the most recent 12-month period.

"Bulk gasoline terminal" means a primary distribution point for delivering gasoline to bulk plants, service stations and other distribution points, where the total gasoline throughput is greater than 20,000 gallons per working day, based on the daily average for the most recent 12-month period.

"Certified Stage II vapor recovery system" means any system certified by California Air Resources Board as having a vapor recovery or removal efficiency of at least 95%, and approved under the provisions of AQP-9, Procedures for Implementation of Regulations Covering Stage II Vapor Recovery Systems for Gasoline Dispensing Facilities (see 9 VAC 5-20-121).

"Condensate" means a hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure or both and remains liquid at standard conditions.

"Crude oil" means a naturally occurring mixture which consists of any combination of hydrocarbons, sulfur, nitrogen or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions.

"Custody transfer" means the transfer of produced crude oil or condensate, after processing or treating or both in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

"Defective equipment" means any absence, disconnection, or malfunctioning of a Stage II vapor recovery system component required by this article including, but not limited to, the following:

a. A vapor return line that is crimped, flattened, blocked, or that has any hole or slit that allows vapors to leak out;

b. A nozzle bellows that has any hole large enough to allow a 1/4-inch diameter cylindrical rod to pass through it or any slit one inch or more in length;

c. A nozzle faceplate or cone that is torn or missing over 25% of its surface;

d. A nozzle with no automatic overfill control mechanism, or an inoperable overfill control mechanism; and

e. An inoperable or malfunctioning vapor processing unit, vacuum generating device, pressure or vacuum relief valve, vapor check valve or any other equipment normally used to dispense gasoline or is required by this article.

"External floating roof" means a storage vessel cover in an open top consisting of a double deck or pontoon single deck which rests upon and is supported by the liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

"Gasoline" means any petroleum distillate having a Reid vapor pressure of four pounds per square inch or greater.

"Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle tanks from stationary storage tanks.

"Independent small business gasoline marketer" means a person engaged in the marketing of gasoline who owns one or more gasoline dispensing facilities and is required to pay for procurement and installation of vapor recovery equipment, unless such owner:

a. Is a refiner; controls, or is controlled by, or is under common control with, a refiner; or is otherwise directly or indirectly affiliated with a refiner or with a person who controls, is controlled by, or is under a common control with a refiner (unless the sole affiliation is by means of a supply contract or an agreement or contract to use a trademark, tradename, service mark, or other identifying symbol or name owned by such refiner or any such person); or

b. Receives less than 50% of his annual income from refining or marketing of gasoline.

For the purposes of this definition, "control" of a corporation means ownership of more than 50% of its stock and "control" of a partnership, joint venture or other nonstock entity means ownership of more than a 50% interest in such partnership, joint venture or other nonstock entity. The lessee of a gasoline dispensing facility, for which the owner of such outlet does not sell, trade in, or otherwise dispense any product at wholesale or retail at such outlet, shall be considered an independent small business marketer if the lessee by lease agreement with the owner is required to pay for the cost of procurement and installation of vapor recovery equipment over a reasonable period.

"Internal floating roof" means a cover or roof in a fixed roof tank which rests upon or is floated upon the liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

"Liquid-mounted" means a primary seal mounted so the bottom of the seal covers the liquid surface between the tank shell and the floating roof.

"Major system modification" means the replacement, repair or upgrade of 75% of a facility's Stage II vapor recovery system equipment.

"Owner" means, for the purposes of this article, any person, including bodies politic and corporate, associations, partnerships, personal representatives, trustees and committees, as well as individuals who own, lease, operate, control or supervise an operation involving the storage or transfer of petroleum liquids or both.

"Petroleum liquids" means crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery.

"Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

"Refiner" means any person or entity that owns or operates a facility engaged in the production of gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants or similar products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives and whose total refinery capacity (including the refinery capacity of any person or entity who controls, is controlled by or is under common control with, such refiner) is greater than 65,000 barrels per day.

"Stage II vapor recovery system" means any equipment designed and used to collect, recover, or destroy, or any combination of those, gasoline vapors displaced during the transfer of gasoline into a motor vehicle fuel tank.

"Submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the tank; or, when applied to a tank which is loaded from the side, any fill pipe the discharge opening of which is entirely submerged when at the minimum operating level.

"Vapor-mounted" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof.

"Vapor tight" means capable of holding a pressure of 18 inH₂O and a vacuum of 6 inH₂O without sustaining a pressure change of more than 3 inH₂O in five minutes.

"Waxy, heavy pour crude oil" means a crude oil with a pour point of 50°F or higher as determined by the American Society for Testing and Materials publication, "Test for Pour Point of Petroleum Oils" (see 9 VAC 5-20-21).

9 VAC 5-40-5220. Standard for volatile organic compounds.

A. Petroleum liquid storage – fixed roof tanks.

1. No owner or other person shall use or permit the use of any fixed roof tank of more than 40,000 gallons capacity for storage of petroleum liquids, unless such

tank is equipped with a control method which will remove, destroy or prevent the discharge into the atmosphere of at least 90% by weight of volatile organic compound emissions.

2. Achievement of the emission standard in subdivision A 1 of this subsection by use of methods in 9 VAC 5-40-5230 A will be acceptable to the board.

3. The provisions of this subsection shall not be applicable to fixed roof tanks having capacities less than 400,000 gallons for crude oil or condensate stored, processed or treated at a drilling and production facility prior to custody transfer.

4. The owner of a fixed roof tank subject to the provisions of subdivision A 1 of this subsection shall:

a. When the fixed roof tank is equipped with an internal floating roof, perform a visual inspection annually of the floating cover through roof hatches, to ascertain compliance with the specifications in subdivisions a (1) and (2) of this subsection.

(1) The cover should be uniformly floating on or above the liquid and there should be no visible defects in the surface of the cover or liquid accumulated on the cover.

(2) The seal must be intact and uniformly in place around the circumference of the cover between the cover and tank wall.

b. Perform a complete inspection of the cover and seal and record the condition of the cover and seal when the tank is emptied for nonoperational reasons such as maintenance, an emergency, or other similar purposes.

c. Maintain records of the throughput quantities and types of petroleum liquids stored, the average monthly storage temperature and true vapor pressure of the liquid as stored, and the results of the inspections performed under the provisions of subdivisions A 4 a and b of this subsection.

B. Petroleum liquid storage – floating roof tanks.

1. No owner or other person shall use or permit the use of any floating roof tank of more than 40,000 gallons capacity for storage of petroleum liquids, unless such tank is equipped with a control method which will remove, destroy or prevent the discharge into the atmosphere of at least 90% by weight of volatile organic compound emissions.

2. Achievement of the emission standard in subdivision B 1 of this subsection by use of methods in 9 VAC 5-40-5230 B will be acceptable to the board.

3. The provisions of this subsection shall not be applicable to the following:

a. Floating roof tanks having capacities less than 400,000 gallons for crude oil or condensate stored, processed or treated at a drilling and production facility prior to custody transfer.

b. Floating roof tanks storing waxy, heavy pour crude oil.

4. The owner of a floating roof tank subject to the provisions of subdivision 1 of this subsection shall:

a. Perform routine inspections annually which shall include a visual inspection of the secondary seal gap.

b. When the floating roof is equipped with a vapor-mounted primary seal, measure the secondary seal gap annually in accordance with subdivisions 4 b (1) and (2) of this subsection.

(1) Physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 1/8-inch uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and tank wall; and

(2) Summing the area of the individual gaps.

c. Maintain records of the types of petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of the inspections performed under the provisions of subdivisions 4 a and b of this subsection.

C. Gasoline bulk loading – bulk terminals.

1. No owner or other person shall cause or permit the discharge into the atmosphere from a bulk gasoline terminal (including any appurtenant equipment necessary to load the tank truck compartments) any volatile organic compound in excess of .67 pounds per 1,000 gallons of gasoline loaded.

2. Achievement of the emission standard in subdivision 1 of this subsection by use of methods in 9 VAC 5-40-5230 C will be acceptable to the board.

D. Gasoline bulk loading – bulk plants.

1. No owner or other person shall use or permit the use of any bulk gasoline plant (including any appurtenant equipment necessary to load or unload tank trucks and account trucks) unless such plant is equipped with a vapor control system that will remove, destroy or prevent the discharge into the atmosphere of at least 77% by weight of volatile organic compound emissions.

2. Achievement of the emission standard in subdivision 1 of this subsection by use of methods in 9 VAC 5-40-5230 D will be acceptable to the board.

3. The provisions of this subsection shall not be applicable to facilities whose average daily throughput of gasoline is less than 4,000 gallons per working day when based on a 30-day rolling average. Average daily throughput means the average daily amount of gasoline pumped at a gasoline dispensing facility during the most recent 30-day period. Average daily throughput shall be calculated for the two most recent consecutive calendar years. If during this two-year period or any period thereafter, the average daily throughput exceeds 4,000 gallons per working day, the facility is no longer exempt from the provisions of subdivision 1 of this subsection.

E. Transfer of gasoline – gasoline dispensing facilities – Stage I vapor control systems.

1. No owner or other person shall transfer or permit the transfer of gasoline from any tank truck into any stationary storage tank unless such tank is equipped with a vapor control system that will remove, destroy or prevent the discharge into the atmosphere of at least 90% by weight of volatile organic compound emissions.

2. Achievement of the emission standard in subdivision 1 of this subsection by use of methods in 9 VAC 5-40-5230 E will be acceptable to the board.

3. The provisions of this subsection shall not apply to the following:

a. Transfers made to storage tanks that are either less than 250 gallons in capacity or located at facilities whose average monthly throughput of gasoline is less than 10,000 gallons.

b. Transfers made to storage tanks equipped with floating roofs or their equivalent.

F. Transfer of gasoline – gasoline dispensing facilities – Stage II vapor recovery systems.

1. No owner or other person shall transfer or permit the transfer of gasoline into the fuel tank of any motor vehicle at any affected gasoline dispensing facility unless the transfer is made using a certified Stage II vapor recovery system that is designed, operated, and maintained such that the vapor recovery system removes, destroys or prevents the discharge into the atmosphere of at least 95% by weight of volatile organic compound emissions.

2. Achievement of the emission standard in subdivision 1 of this subsection by use of methods in 9 VAC 5-40-5230 F will be acceptable to the board.

3. The affected gasoline facilities shall be in compliance with the emissions standard in subdivision 1 of this subsection according to the following schedule:

a. Facilities which begin actual construction on or after January 1, 1993, must comply upon startup unless the facility can prove it is exempt under the provisions of subdivision 4 of this subsection.

b. Facilities which begin actual construction after November 15, 1990, and before January 1, 1993, must comply by May 15, 1993.

c. Facilities which begin actual construction on or before November 15, 1990, and dispense an average monthly throughput of 100,000 gallons or more of gasoline must comply by November 15, 1993.

d. All other affected facilities which begin actual construction on or before November 15, 1990, must comply by November 15, 1994.

4. The provisions of this subsection shall not apply to the following facilities:

a. Gasoline dispensing facilities with an average monthly throughput of 10,000 gallons or less.

b. Gasoline dispensing facilities owned by independent small business gasoline marketers with an average monthly throughput of 50,000 gallons or less.

c. Gasoline dispensing devices that are used exclusively for refueling marine vehicles, aircraft, farm equipment, and emergency vehicles.

5. Any gasoline dispensing facility subject to the provisions of this subsection shall also comply with the provisions subsection E of this section (Stage I vapor controls).

6. In accordance with the provisions of AQP-9, Procedures for Implementation of Regulations Covering Stage II Vapor Recovery Systems for Gasoline Dispensing Facilities (see 9 VAC 5-20-121), owners of affected gasoline dispensing facilities shall:

a. Register the Stage II system with the board and submit Stage II vapor recovery equipment specifications at least 90 days prior to installation of the Stage II vapor recovery system. Owners of gasoline dispensing facilities in existence as of January 1, 1993, shall contact the board by February 1, 1993, and register the Stage II vapor recovery system according to the schedule outlined in AQP-9. Any repair or modification to an existing Stage II vapor recovery system that changes the approved configuration shall be reported to the board no later than 30 days after completion of such repair or modification.

b. Perform tests, before the equipment is made available for use by the public, on the entire Stage II vapor recovery system to ensure the proper functioning of nozzle automatic shut-off mechanisms and flow prohibiting mechanisms where applicable, and perform a pressure decay/leak test, a vapor space tie test, and a liquid blockage test. In cases where use of one of the test methods in AQP-9 is not feasible for a particular Stage II vapor recovery system, the owner may, upon approval of the board, use an alternative test method.

c. No later than 15 days after system testing is completed, submit to the board documentation showing the results of the tests outlined in subdivision 6 b of this subsection.

d. Ensure that the Stage II vapor recovery system is vapor tight by performing a pressure decay/leak test and a liquid blockage test at least every five years, upon major system replacement or modification, or if requested by the board after evidence of a system malfunction which compromises the efficiency of the system.

e. Notify the board at least two days prior to Stage II vapor recovery system testing as required by subdivisions 6 b and 6 d of this subsection.

f. Conspicuously post operating instructions for the vapor recovery system on each gasoline dispensing pump which includes the following information:

(1) A statement, as described in Part III F 1 of AQP-9 (see 9 VAC 5-20-121), describing the benefits of the Stage II vapor recovery system.

(2) A clear description of how to correctly dispense gasoline with the vapor recovery nozzles.

(3) A warning that repeated attempts to continue dispensing gasoline, after the system has indicated that the vehicle fuel tank is full (by automatically shutting off) may result in spillage or recirculation of gasoline.

(4) A telephone number to report problems experienced with the vapor recovery system to the board.

g. Promptly and conspicuously post "Out Of Order" signs on any nozzle associated with any part of the vapor recovery system which is defective if use of that nozzle would allow escape of gasoline vapors to the atmosphere. "Out of order" signs shall not be removed from affected nozzles until said system has been repaired.

h. Provide adequate training and written instructions for facility personnel to assure proper operation of the vapor recovery system.

i. Perform routine maintenance inspections of the Stage II vapor recovery system on a daily and monthly basis and record the monthly inspection results as specified in Part III E of AQP-9 (see 9 VAC 5-20-121).

j. Maintain records on site, in a form and manner acceptable to the board, of operator training, system registration and equipment approval, and maintenance, repair and testing of the system. Original documents may be maintained at a centralized location only if copies of these documents are maintained on-site according to the requirements set forth in AQP-9. Records shall be retained for a period of at least two years, unless specified otherwise, and shall be made immediately available for inspection by the board upon request.

G. Tank trucks/account trucks and vapor collection systems.

1. No owner or other person shall use or permit the use of any tank truck or account truck that is loaded or unloaded at facilities subject to the provisions of subsection C, D or E of this section unless such truck is designed, maintained and certified to be vapor tight. In addition, there shall be no avoidable visible liquid leaks. Invariably there will be a few drops of liquid from disconnection of dry breaks in liquid lines even when well maintained; these drops are allowed.

2. Vapor-laden tank trucks or account trucks exclusively serving facilities subject to subsection D or E of this section may be refilled only at facilities in compliance with subsection C of this section.

3. Tank truck and account truck hatches shall be closed at all times during loading and unloading operations (periods during which there is liquid flow into or out of the truck) at facilities subject to the provisions of subsection C, D or E of this section.

4. During loading or unloading operations at facilities subject to the provisions of subsection C, D or E of this section, there shall be no volatile organic compound concentrations greater than or equal to 100% of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters around the perimeter of a potential leak source as detected by a combustible gas detector. In addition, there shall be no avoidable visible liquid leaks. Invariably there will be a few liquid drops from the disconnection of well-maintained bottom loading dry breaks and the raising of well-maintained top loading vapor heads; these few drops are allowed. The vapor collection system includes all piping, seals, hoses, connection, pressure-vacuum vents and other possible leak sources between the truck and the vapor disposal unit and between the storage tanks and vapor recovery unit.

5. The vapor collection and vapor disposal equipment must be designed and operated to prevent gauge pressure in the tank truck from exceeding 18 inH₂O and prevent vacuum from exceeding 6 inH₂O.

6. Testing to determine compliance with subdivision 1 of this subsection

shall be conducted and reported and data shall be reduced as set forth in procedures approved by the board using test methods specified there. All tests shall be conducted by, or under the direction of, a person qualified by training or experience in the field of air pollution testing, or tank truck maintenance and testing and approved by the board.

7. Monitoring to confirm the continuing existence of leak tight conditions specified in subdivision 4 of this subsection shall be conducted as set forth in procedures approved by the board using test methods specified there.

8. Owners of tank trucks and account trucks subject to the provisions of subdivision 1 of this subsection shall certify, each year that the trucks are vapor tight in accordance with test procedures specified in subdivision 6 of this subsection. Trucks that are not vapor tight must be repaired within 15 days of the test and be tested and certified as vapor tight.

9. Each truck subject to the provisions of subdivision 1 of this subsection shall have information displayed on the tank indicating the expiration date of the certification and such other information as may be needed by the board to determine the validity of the certification. The means of display and location of the above information shall be in a manner acceptable to the board.

10. An owner of a vapor collection/control system shall repair and retest the system within 15 days of the testing, if it exceeds the limit specified in subdivision 4 of this subsection.

11. The owner of a tank/account truck or vapor collection/control system or both subject to the provisions of this section shall maintain records of all certification testing and repairs. The records must identify the tank/account truck, vapor collection system, or vapor control system; the date of the test or repair; and, if applicable, the type of repair and the date of retest. The records must be maintained in a legible, readily available condition for at least two years after the date testing or repair was completed.

12. The records of certification tests required by subdivision 11 of this subsection shall, as a minimum, contain the following:

- a. The tank/account truck tank identification number;
- b. The initial test pressure and the time of the reading;
- c. The final test pressure and the time of the reading;
- d. The initial test vacuum and the time of the reading;
- e. The final test vacuum and the time of the reading; and
- f. Name and the title of the person conducting the test.

13. Copies of all records and reports required by this section shall immediately be made available to the board, upon verbal or written request, at any reasonable time.

14. The board may, at any time, monitor a tank/account truck, vapor collection system, or vapor control system, by the method referenced in subdivision 6 or 7 of this subsection to confirm continuing compliance with subdivision 1 or 4 of this subsection.

15. If, after over one year of monitoring (i.e., at least two complete annual checks), the owner of a truck subject to the provisions of subdivision 6 of this subsection feels that modification of the requirements are in order, the owner may request in writing to the board that a revision be made. The request should include data that have been developed to justify any modifications in the monitoring schedule. On the other hand, if the board finds an excessive number of leaks during an inspection, or if the owner finds an excessive number of leaks during scheduled monitoring, consideration shall be given to increasing the frequency of inspection.

9 VAC 5-40-5230. Control technology guidelines.

A. Petroleum liquid storage – fixed roof tanks.

1. The tank should be a pressure tank maintaining working pressure sufficient at all times to prevent vapor loss to the atmosphere, or be designed and equipped with one of the following vapor control systems:

a. An internal floating roof resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank shell. All tank gauging and sampling devices should be vapor tight except when gauging or sampling is taking place.

b. Any system of equal or greater control efficiency to the system in subdivision A 1 a of this section, provided such system is approved by the board.

2. There should be no visible holes, tears or other openings in the seal or any seal fabric.

3. All openings, except stub drains, should be equipped with a cover, seal or lid. The cover, seal or lid should be in a closed position at all times except when the device is in actual use. Automatic bleeder vents should be closed at all times except when the roof is floated off or landed on the roof leg supports. Rim vents, if provided, should be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

4. The exterior above ground surfaces (exposed to sunlight) should be

painted white, light pastels, or light metallic and such exterior paint should be periodically maintained in good condition. Repainting may be performed during normal maintenance periods.

B. Petroleum liquid storage – floating roof tanks.

1. The tank should be designed and equipped with one of the following vapor control systems:

a. An external floating roof resting on the surface of the liquid contents and equipped with a seal closure device (meeting the specifications set forth in subdivisions B 2 and 3 of this section) to close the space between the roof edge and tank shell. All tank gauging and sampling devices should be vapor tight except when gauging or sampling is taking place.

b. Any system of equal or greater control efficiency to the system in subdivision B 1 a of this section, provided such system is approved by the board.

2. Unless the tank is a welded tank fitted with a metallic-type shoe seal which has a secondary seal from the top to the shoe seal to the tank wall (a shoe-mounted secondary), the tank should be fitted with a continuous secondary seal extending from the floating roof to the tank wall (a rim-mounted secondary) if:

a. The tank is a welded tank, the true vapor pressure of the contained liquid is 4.0 psi or greater, and the primary seal is one of the following:

(1) A metallic-type shoe seal.

(2) A liquid-mounted foam seal.

(3) A liquid-mounted liquid-filled type seal.

(4) Any other seal closure device which can be demonstrated equivalent to the primary seals specified in subdivisions B 2 a (1) through (3) of this section.

b. The tank is a riveted tank, the true vapor pressure of the contained liquid is 1.5 psi, or greater, and the seal closure device is as described in subdivision B 2 a of this section.

c. The tank is a welded or riveted tank, the true vapor pressure of the contained liquid is 1.5 psi, or greater, and the primary seal is vapor mounted. When such primary seal closure device can be demonstrated equivalent to the primary seals described in subdivision B 2 a of this section, the provisions of that subdivision apply.

3. The seal closure devices should meet the following requirements:

a. There should be no visible holes, tears or other openings in the seal or any seal fabric.

b. The seal should be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall.

c. The areas where the gap between the secondary seal, installed pursuant to subdivision B 2 c of this section, and the tank wall exceeds 1/8 inch in width shall be calculated in square inches. The sum of all such areas shall not exceed 1.0 square inch per foot of tank diameter.

4. All openings, except for automatic bleeder vents, rim space vents and leg sleeves, should provide a projection below the liquid surface. All openings, except stub drains, should be equipped with a cover, seal or lid. The cover, seal or lid should be in a closed position at all times except when the device is in actual use. Automatic bleeder vents should be closed at all times except when the roof is floated off or landed on the roof leg supports. Rim vents, if provided, should be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Any emergency roof drain should be provided with a slotted membrane fabric cover or equivalent cover that covers at least 90% of the area of the opening.

5. The exterior above ground surfaces (exposed to sunlight) should be painted white, light pastels, or light metallic and such exterior paint should be periodically maintained in good condition. Repainting may be performed during normal maintenance periods.

C. Gasoline bulk loading – bulk terminals.

The control system should consist of the following:

1. A vapor collection and disposal system with the vapor disposal portion consisting of one of the following:

a. Compression – refrigeration – adsorption system;

b. Refrigeration system;

c. Oxidation system; or

d. Any system of equal or greater control efficiency to the systems in subdivisions C 1 a through c of this section, provided such system is approved by the board.

2. A vapor collection and disposal system with the vapor collection

portion meeting the following criteria:

a. Loading should be accomplished in such manner that all displaced vapor and air will be vented only to the vapor disposal system. Measures should be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish substantially complete drainage before the loading device is disconnected;

b. The pressure relief valves on storage containers and tank trucks should be set to release at no less than 0.7 psi or the highest possible pressure in accordance with the following National Fire Prevention Association Standards: "Standard for Tank Vehicles for Flammable and Combustible Liquids," "Flammable and Combustible Liquids Code," "Code for Motor Fuel Dispensing Facilities and Repair Garages" (see 9 VAC 5-20-21);

c. Pressure in the vapor collection lines should not exceed tank truck pressure relief valve settings; and

d. All loading and vapor lines should be equipped with fittings which make vapor tight connections and which close when disconnected.

D. Gasoline bulk loading – bulk plants.

1. The control system should consist of one of the following:

a. Submerged filling of account trucks and storage tanks (either top-submerged or bottom-fill) plus a vapor balance (displacement) system to control volatile organic compounds displaced by gasoline delivery to the storage tank and account truck;

b. Top loading vapor recovery method of filling account trucks and storage tanks plus a vapor balance (displacement) system to control volatile organic compounds displaced by gasoline delivery to the storage tank and account truck; or

c. Any system of equal or greater control efficiency to the system in subdivision D 1 a or b of this section, provided such system is approved by the board.

2. The control system in subdivisions D 1 a and b of this section should meet the following equipment specifications and operating procedures:

a. For top-submerged and bottom-fill. The fill pipe should extend to within six inches of the bottom of the storage tank and account truck during top-submerged filling operations. Any bottom fill is acceptable if the inlet is flush with the tank bottom; and

b. For the balance system:

(1) There should be no leaks in the account trucks' and tank trucks' pressure vacuum relief valves and hatch covers, nor tank trucks, account trucks, storage tanks or associated vapor return lines during loading or unloading operations.

(2) The pressure relief valves on storage tanks, account trucks and tank trucks should be set to release at no less than 0.7 psi or the highest possible pressure in accordance with the following National Fire Prevention Association Standards: "Standard for Tank Vehicles for Flammable and Combustible Liquids," "Flammable and Combustible Liquids Code," "Code for Motor Fuel Dispensing Facilities and Repair Garages" (see 9 VAC 5-20-21).

(3) Pressure in the vapor collection lines should not exceed account truck or tank truck pressure relief valve settings.

(4) All loading and vapor lines should be equipped with fittings which make vapor tight connections and which close when disconnected.

E. Transfer of gasoline – gasoline dispensing facilities – stage I vapor control systems.

The control system should consist of the following:

1. A submerged fill pipe;
2. A vapor control system with the vapor recovery portion consisting of one of the following:
 - a. A vapor tight return line from the storage container to the tank truck which shall be connected before gasoline is transferred into the container;
 - b. Any adsorption system or condensation system; or
 - c. Any system of equal or greater control efficiency to the systems in subdivision E 2 a or b of this section, provided such system is approved by the board.
3. A vapor control system with the vapor balance portion meeting the following criteria:
 - a. There should be no leaks in the tank truck's pressure vacuum relief valves and hatch covers, nor truck tanks, storage tanks and associated vapor return lines during loading or unloading operations;
 - b. The pressure relief valves on storage containers and tank trucks should be set to release at no less than 0.7 psi or the highest possible pressure in

accordance with the following National Fire Prevention Association Standards: “Standard for Tank Vehicles for Flammable and Combustible Liquids,” “Flammable and Combustible Liquids Code,” “Code for Motor Fuel Dispensing Facilities and Repair Garages” (see 9 VAC 5-20-21);

c. Pressure in the vapor collection lines should not exceed tank truck pressure relief valve settings; and

d. All loading and vapor lines should be equipped with fittings which make vapor tight connections and which close when disconnected.

F. Transfer of gasoline – gasoline dispensing facilities – Stage II vapor recovery systems.

1. Stage II vapor recovery systems shall be limited to those certified systems approved under the provisions of AQP-9, Procedures for Implementation of Regulations Covering Stage II Vapor Recovery Systems for Gasoline Dispensing Facilities (see 9 VAC 5-20-121), which utilize coaxial hoses and vapor check valves in the nozzle or remote vapor check valves which do not impede the performance of the functional tests required in subdivision F 6 b of 9 VAC 5-40-5220.

2. Stage II vapor recovery systems installed prior to January 1, 1993, must meet the specifications of a system certified by the California Air Resources Board. Owners of Stage II vapor recovery systems utilizing remote check valves which will impede the performance of the functional tests required in subdivision F 6 b of 9 VAC 5-40-5220 and dual vapor recovery hoses shall replace these components with check valves in the nozzle and with coaxial hoses by January 1, 1995.

9 VAC 5-40-5240. Standard for visible emissions.

The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply.

9 VAC 5-40-5250. Standard for fugitive dust/emissions.

The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply.

9 VAC 5-40-5260. Standard for odor.

The provisions of Article 2 (9 VAC 5-40-130 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Odor, Rule 4-2) apply.

9 VAC 5-40-5270. Standard for toxic pollutants.

The provisions of Article 3 (9 VAC 5-40-160 et seq.) of 9 VAC 5 Chapter 40

(Emission Standards for Toxic Pollutants, Rule 4-3) apply.

9 VAC 5-40-5280. Compliance.

The provisions of 9 VAC 5-40-20 (Compliance) apply.

9 VAC 5-40-5290. Test methods and procedures.

The provisions of 9 VAC 5-40-30 (Emission Testing) apply.

9 VAC 5-40-5300. Monitoring.

The provisions of 9 VAC 5-40-40 (Monitoring) apply.

9 VAC 5-40-5310. Notification, records and reporting.

The provisions of 9 VAC 5-40-50 (Notification, Records and Reporting) apply.

9 VAC 5-40-5320. Registration.

The provisions of 9 VAC 5-20-160 (Registration) apply.

9 VAC 5-40-5330. Facility and control equipment maintenance or malfunction.

The provisions of 9 VAC 5-20-180 (Facility and Control Equipment Maintenance or Malfunction) apply.

9 VAC 5-40-5340. Permits.

A permit may be required prior to beginning any of the activities specified below and the provisions of 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) and 9 VAC 5 Chapter 80 (9 VAC 5-80-10 et seq.) may apply. Owners contemplating such action should contact the appropriate regional office for guidance.

1. Construction of a facility.
2. Reconstruction (replacement of more than half) of a facility.
3. Modification (any physical change to equipment) of a facility.
4. Relocation of a facility.
5. Reactivation (restart-up) of a facility.

HISTORICAL NOTES:

Derived from: Rule 4-37 of Part IV of VR 120-01 (§ 120-04-3701 through § 120-04-3715)

Promulgated: January 30, 1979
Promulgated: October 5, 1979
Effective Date: November 30, 1979
Amended: October 5, 1979
Amended: November 30, 1979
Amended: June 5, 1981
Amended: July 1, 1982
Amended: January 1, 1983
Amended: January 1, 1985
Amended: October 1, 1986
Amended: July 1, 1991
Amended: January 1, 1993
Amended: January 1, 1998
Amended: October 1, 2000
Amended: February 1, 2002
Amended: March 24, 2004
Amended: October 4, 2006

REG\VAC\437